

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 57-080670  
(43)Date of publication of application : 20.05.1982

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(51)Int. CI. H01M 4/62  
H01M 2/16  
// H01M 4/20  
H01M 4/24  
H01M 6/32  
H01M 10/26

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(21)Application number : 55-157331 (71)Applicant : YUASA BATTERY CO LTD  
(22)Date of filing : 08.11.1980 (72)Inventor : IKEDA HIROTAKE  
TAKEUCHI KENICHI

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## (54) BATTERY

### (57)Abstract:

PURPOSE: To improve the long-period wetting performance of both a given electrode and a given separator, which are components of a battery, by making the electrode, the separator and the electrolyte of the battery to be treated or added with a given surfactant.

CONSTITUTION: A battery has an electrode containing a water-repellent resin binding agent and a separator made of a water-repellent resin. The electrode, the separator and the electrolyte of such a battery is either treated or added with a surfactant containing silicon or fluorine. The former surfactant containing silicon is preferred to be a denatured silicone oil consisting of dimethylpolysiloxane and either a hydrophilic group only or both a hydrophilic and a hydrocarbon system liophilic group, especially a copolymer of polyether and dimethylpolysiloxane. The former surfactant containing fluorine preferably consists of perfluoro alkyl ane either a hydrophilic group only or both a hydrophlic group and a hydrocarbon system surfactant. Consequently, the wetting of battery components is improved, and the charge-and-discharge cycle characteristic of the battery is enhanced.

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## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision  
of rejection].

[Kind of final disposal of application  
other than the examiner's decision of  
rejection or application converted  
registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against  
examiner's decision of rejection]

[Date of extinction of right]

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**PATENT ABSTRACTS OF JAPAN**

(11)Publication number : 57-111957  
(43)Date of publication of application : 12.07.1982

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(51)Int. Cl. H01M 4/86

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(21)Application number : 55-185127 (71)Applicant : TOSHIBA CORP  
(22)Date of filing : 27.12.1980 (72)Inventor : SUZUKI NOBUKAZU

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**(54) AIR ELECTRODE****(57)Abstract:**

**PURPOSE:** To prevent any liquid leakage of a battery which is prepared by using an air electrode, and enable heavy-load discharge of the battery by preparing the air electrode by making an oxygen-gas permselective film to be in contact with an air electrode body, with a water repellent layer of a given thickness interposed between the electrode body and the oxygen-gas permselective film.

**CONSTITUTION:** A water repellent layer, which has a thickness of 0.1~1 $\mu$ m and is made of fluoroethylene propylene (copolymer) or the like having electrolyte resisting and water repellent property, is formed on a surface of an oxygen-gas permselective film such as polysiloxane by a sputtering or a vapor deposition method. The oxygen-gas permselective film is pressed upon and is made in contact with an electrode body made of a porous active metal such as a silver filter, with the water repellent layer interposed between the electrode body and the oxygen-gas permselective film. After that, they are made to adhere to each other by thermal fusion or the like, thus an air electrode is prepared. Thus prepared air electrode is used for a hydrogen/oxygen fuel cell, a metal/air battery or the like.

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[Date of final disposal for application]

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